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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,988	09/22/2003	Sergey A. Korenev	ST8676US.CIP	1943

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EXAMINER	
HE, AMY	

ART UNIT	PAPER NUMBER
2858	

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/667,988	KORENEV ET AL.	
	Examiner	Art Unit	
	Amy He	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 September 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/3/03, 5/3/04, 8/24/04, 10/18/04, 11/2/04, 11/29/04, 12/3/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 21 is objected to. Replace "on" (on line 2) with --one--. Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 21-26 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 16-21, 24 of copending Application No. 10/389,036. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a method for determining a concentration of hydrogen peroxide in a fluid, the method comprising exposing a capacitor to a fluid and determining a change in an electrical property of the capacitor, the changes in the electrical property of the capacitor varying according to the concentration of the hydrogen peroxide in the fluid.

3. Claims 29-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 16-21, 24 of copending Application No. 10/389,036, in view of Leskovar (U. S. Patent No. 4, 158,810). Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a method for determining a concentration of hydrogen peroxide in a fluid.

Regarding claims 29-34, instead of using a capacitive voltage divider, the instant application claims a resistive voltage divider. Accordingly, the instant application claims the method step of exposing a resistor having first and second terminal to the fluid and determining a change in an electrical property of the resistor. The copending application claims the method step of exposing a capacitor to the fluid and determining a change in an electrical property of the capacitor. A person of ordinary skill in the art would find it obvious at the time the invention was made to replace the capacitive voltage divider of the copending application with a resistive voltage divider, since it is well known in the art to use a capacitive and a resistive voltage divider interchangeably, as evidenced in Leskovar (U. S. Patent No. 4, 158,810) (column 5, lines 56-59).

4. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 8-11, 21 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cmelik K. (U. S. Patent No. 3, 816,811).

Referring to claim 1, Cmelik discloses a chemical concentration measuring system (in Figure 3) for determining a concentration of the chemical in a fluid (petroleum) comprised of at least one chemical component, comprising:

a capacitive voltage divider circuit (41) including:

a first capacitor (C2) having first and second conductors (4 and 5) exposed to the fluid, said fluid comprising a dielectric (abstract; column 3, lines 43-44) therebetween , and

a second capacitor (C1);

an alternating current (AC) voltage generator (40) for applying an AC voltage to the capacitive voltage divider circuit; and

processing means for measuring a voltage across the second capacitor (C1) to determine a first capacitance (represented by the changes in the dielectric constant of the petroleum) of the first capacitor (C2) , and determining the concentration of the chemical in the fluid in accordance with the first capacitance (abstract; column 3, line 40-column 4, line 32).

Still referring to claim 1, Cmelik does not disclose the chemical concentration measuring system determining the concentration of hydrogen peroxide. A person of ordinary skill in the art would find it obvious at the time the invention was made to use

the concentration measuring system of Cmelik for determining the concentration of hydrogen peroxide or any other suitable chemicals, since the intended use of the claimed invention (for measuring the concentration of hydrogen peroxide) did not result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from Cmelik. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The prior art structure as taught by Cmelik is capable of performing the intended use of measuring the concentration of hydrogen peroxide.

Referring to claims 2-3, Cmelik discloses that the first capacitor is a cylindrical capacitor (Figures 1-2; claim 2).

Referring to claims 8-9, Cmelik discloses that the fluid is a liquid solution, wherein said liquid solution includes at least water (water in the petroleum).

Referring to claims 10-11, Cmelik discloses the chemical concentration measuring system for determining the concentration of a chemical in a fluid as in claim 1. Cmelik does not specifically disclose that the fluid is a gas, wherein the gas includes at least one of: vaporized hydrogen peroxide, water vapor, air and ozone. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Cmelik to disclose determining the concentration of a gas, such as water vapor, since the intended use of the claimed invention (for measuring the concentration of a gas) did not result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from Cmelik. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

The prior art structure as taught by Cmelik is capable of performing the intended use of measuring the concentration of a gas.

Referring to claims 21, 25-28, they are the method claims corresponding to the rejected apparatus claim (claims 1 and 8-11). They are rejected for the same reasons as stated above for the rejection of the apparatus claim.

6. Claims 12, 17-20, 29 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cmelik K. (U. S. Patent No. 3, 816,811), in view of Leskovar (U. S. Patent No. 4, 158,810).

Referring to claim 12, Cmelik discloses the chemical concentration measuring system comprising a capacitive voltage divider circuit as in claim 1. Cmelik does not specifically disclose a resistive voltage divider circuit. A person of ordinary skill in the art would find it obvious at the time of the invention to modify Cmelik to replace the capacitive voltage divider circuit with a resistive voltage divider circuit, since it is well known in the art to use a capacitive and a resistive voltage divider interchangeably, as evidenced in Leskovar (U. S. Patent No. 4, 158,810) (column 5, lines 56-59).

Referring to claims 17-18, Cmelik discloses that the fluid is a liquid solution, wherein said liquid solution includes at least water (water in the petroleum).

Referring to claims 19-20, Cmelik in view of Leskovar discloses the chemical concentration measuring system for determining the concentration of a chemical in a fluid as in claim 12. Cmelik in view of Leskovar does not specifically disclose that the fluid is a gas, wherein the gas includes at least one of: vaporized hydrogen peroxide,

water vapor, air and ozone. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify Cmelik to disclose determining the concentration of a gas, such as water vapor, since the intended use of the claimed invention (for measuring the concentration of a gas) did not result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from Cmelik. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The prior art structure as taught by Cmelik in view of Leskovar is capable of performing the intended use of measuring the concentration of a gas.

Referring to claims 29 and 33-36, they are the method claims corresponding to the rejected apparatus claim (claims 12 and 17-20). They are rejected for the same reasons as stated above for the rejection of the apparatus claim.

7. Claims 4-7 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cmelik K. (U. S. Patent No. 3, 816,811), in view of Silveri et al. (U. S. Pub. No. 2002/0014410).

Referring to claims 4-7, Cmelik discloses the chemical concentration measuring system as in claim 1. Cmelik does not specifically disclose a memory for storing a table of data including capacitance values and corresponding concentration values indicative of the relative concentration of hydrogen peroxide in the fluid; obtaining a relative concentration from a table; interpolate or extrapolate a relative concentration using the table; or normalizes said relative concentration to provide an absolute concentration of

the chemical in the fluid. The use of a lookup table stored in a memory; the method of interpolating or extrapolating a value using the lookup table; and the method of normalizing a value are well known in the art as evidenced in Silveri et al. (see [0255], [0256], [0259]; claims 13-14 and 17-18). A person of ordinary skill in the art would find it obvious at the time of the invention to modify Cmelik to use a lookup table, interpolation/extrapolation, or normalization method, as taught by Silveri et al, for the purpose of storing a table of data including capacitance values and corresponding concentration values indicative of the relative concentration of the chemical/hydrogen peroxide in the fluid; obtaining a relative concentration from the data in the table; interpolate or extrapolate a relative concentration using the table; and normalizes said relative concentration to provide an absolute concentration of the chemical/hydrogen peroxide in the fluid.

Referring to claims 22-24, they are the method claims corresponding to the rejected apparatus claim (claims 4 and 6-7). They are rejected for the same reasons as stated above for the rejection of the apparatus claim.

8. Claims 13-16 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cmelik K. (U. S. Patent No. 3, 816,811) in view of Leskovar (U. S. Patent No. 4, 158,810), and further in view of Silveri et al. (U. S. Pub. No. 2002/0014410).

Referring to claims 13-16, Cmelik in view of Leskovar discloses the chemical concentration measuring system as in claim 12. Cmelik in view of Leskovar does not specifically disclose a memory for storing a table of data including resistance values and

corresponding concentration values indicative of the relative concentration of hydrogen peroxide in the fluid; obtaining a relative concentration from a table; interpolate or extrapolate a relative concentration using the table; or normalizes said relative concentration to provide an absolute concentration of the chemical in the fluid. The use of a lookup table stored in a memory; the method of interpolating or extrapolating a value using the lookup table; and the method of normalizing a value are well known in the art as evidenced in Silveri et al. (see [0255], [0256], [0259]; claims 13-14 and 17-18). A person of ordinary skill in the art would find it obvious at the time of the invention to further modify Cmelik to use a lookup table, interpolation/extrapolation, or normalization method, as taught by Silveri et al, for the purpose of storing a lookup table including resistance values and corresponding concentration values indicative of the relative concentration of the chemical/hydrogen peroxide in the fluid; obtaining a relative concentration from the data in the table; interpolate or extrapolate a relative concentration using the table; and normalizes said relative concentration to provide an absolute concentration of the chemical/hydrogen peroxide in the fluid.

Referring to claims 30-32, they are the method claims corresponding to the rejected apparatus claim (claims 13 and 15-16). They are rejected for the same reasons as stated above for the rejection of the apparatus claim.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (571) 272-2230. The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 571-272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH

December 23, 2004.

ANJAN DEB
PRIMARY EXAMINER